CLAIMS

1. An information storage device comprising:

a plurality of memory cells for storing data by accumulating an electrical charge; and

an amplifier for amplifying the electrical charge of the memory cells,

wherein a synchronizing clock signal is used for input/output timing of the data; and

wherein an electrical charge removal operation for moving an electrical charge from said memory cells to said amplifier or an electrical charge accumulation operation for acquiring an electrical charge from said amplifier and accumulating the electrical charge in said memory cells and an input/output operation for said amplifier in relation to the outside of the information storage device are processed while using a single clock of said synchronizing clock signal for synchronization timing.

2. The information storage device according to claim 1, wherein the frequency of said synchronizing clock signal is variable.

3. The information storage device according to claim 1, wherein said operations begin when a request signal is received; and wherein, when said request signal

is received, the address of a memory cell related to the request signal is compared against the address of data temporarily retained in said amplifier at the time of request signal reception.

4. An information storage device comprising:

a plurality of memory cells for storing data by accumulating an electrical charge;

an amplifier for amplifying the electrical charge of the memory cells; and

a comparator for comparing a requested memory cell address against data temporarily retained in said amplifier,

wherein, if the requested memory cell address does not agree with the address of the data in said amplifier, instructions are issued for sequentially processing an electrical charge accumulation operation for acquiring an electrical charge from said amplifier and accumulating the electrical charge in said memory cells, an input/output operation for said amplifier in relation to the outside of the information storage device, and an electrical charge removal operation for moving an electrical charge from said memory cells to said amplifier in order named while using a single clock for synchronization timing.

5. The information storage device according to claim 4, wherein, when nothing is retained by said amplifier, said comparator issues instructions for sequentially processing an electrical charge removal operation for moving an electrical charge from said memory cells to said amplifier and an input/output operation for said amplifier in relation to the outside of the information storage device in order named while using a single clock for synchronization timing.

6. The information storage device according to claim 4, wherein, when the requested memory cell address agrees with the address of the data in said amplifier, said comparator issues instructions for processing an input/output operation for said amplifier in relation to the outside of the information storage device with clock synchronization achieved.

7. The information storage device according to claim 4, wherein the frequency of said synchronizing clock signal is variable.

8. An information storage device comprising:

a plurality of memory cells for storing data by accumulating an electrical charge;

an amplifier for amplifying the electrical charge of the memory cells; and

a comparator for comparing a requested memory cell address against data in said amplifier, and performs, on every single clock of a synchronizing clock signal, an electrical charge removal operation for moving an electrical charge from said memory cells to said amplifier, an electrical charge accumulation operation for acquiring an electrical charge from said amplifier and accumulating the electrical charge in the memory cells, and an input/output operation for said amplifier in relation to the outside of the information storage device.

wherein, if the requested memory cell address agrees with the address of the data in said amplifier, instructions are issued for sequentially processing an electrical charge accumulation operation for acquiring an electrical charge from said amplifier and accumulating the electrical charge in said memory cells, an input/output operation for said amplifier in relation to the outside of the information storage device, and an electrical charge removal operation for moving an electrical charge from said memory cells to said amplifier in order named while using a single clock of said synchronizing clock signal for synchronization timing.

9. The information storage device according to claim 8, wherein the frequency of said synchronizing clock signal is variable.

10. The information storage device according to claim 8, wherein, in accordance with the frequency of said synchronizing clock signal, said comparator issues instructions for sequentially processing an electrical charge accumulation operation for acquiring an electrical charge from said amplifier and accumulating the electrical charge in said memory cells and an input/output operation for said amplifier in relation to the outside of the information storage device in order named, and for sequentially processing an input/output operation for said amplifier in relation to the outside of the information storage device and an electrical charge accumulation operation for acquiring an electrical charge from said amplifier and accumulating the electrical charge in said memory cells in order named.

11. An information storage method comprising the steps of:

comparing, when a request signal is received, the memory cell address designated by the request signal against the address of data temporarily retained in an amplifier; and

selectively performing, in accordance with the comparison result, an electrical charge removal operation for moving an electrical charge from said memory cells to said amplifier, an electrical charge accumulation operation for acquiring an electrical charge from said amplifier and accumulating the electrical charge in said memory cells, and an input/output operation for said amplifier in relation to the outside of the information storage device.

12. The information storage method according to claim 11, wherein the step of selectively performing said operations is processed while using substantially the same clock of a synchronizing clock signal for synchronization timing.

13. The information storage method according to claim 11, wherein the frequency of said synchronizing clock signal is variable.

14. The information storage method according to claim 11, wherein said selectively performed operations comprise a process that is a combination of two or more operations.

15. An information storage program for executing an information storage method that comprises the steps of:

comparing, when a request signal is received, the memory cell address designated by the request signal against the address of data temporarily retained in an amplifier; and

selectively performing, in accordance with the comparison result, an electrical charge removal operation for moving an electrical charge from said memory cells to said amplifier, an electrical charge accumulation operation for acquiring an electrical charge from said amplifier and accumulating the electrical charge in said memory cells, and an input/output operation for said amplifier in relation to the outside of the information storage device.

16. The information storage program according to claim 15, wherein the step of selectively performing said operations is processed while using substantially the same clock of a synchronizing clock signal for synchronization timing.

17. The information storage program according to claim 15, wherein said selectively performed operations comprise a process that is a combination of two or more operations.